

I CLAIM:

1. An emission control device comprising an inlet and an outlet for gas containing particulates, said device having a housing with a passage extending between said inlet and said outlet, a moisturizer located at or near said inlet to moisturize said gas, a blower located to cause said gas to flow through said device, a rotor located in said housing across said passage, said rotor being rotatably mounted to remove moisture and particulates from said gas, said passage having a change in direction to assist in removing moisture and particulates from said gas, said device having a drain for moisture.
2. A device as claimed in Claim 1 wherein said device is a scrubber and said blower is a fan.
3. A device as claimed in Claim 2 wherein said fan is located within said passage.
4. A device as claimed in Claim 3 wherein said fan and rotor are constructed on the same component with two sets of blades, a first set of blades for the fan and a second set of blades for the rotor.
5. A device as claimed in Claim 4 wherein the first set of blades is oriented at an angle to force said gas through said device and said second set of blades is oriented at an angle that is substantially perpendicular to a direction of rotation of said component.
6. A device as claimed in Claim 1 wherein said rotor has blades thereon that are oriented at an angle that is substantially perpendicular to a direction of rotation of said rotor.
7. A device as claimed in any one of Claims 1, 2 or 4 wherein said housing has a cylindrical shape.
8. A device as claimed in any one of Claims 1, 2 or 4 wherein said housing has a cylindrical shape and said passage is located on an outer portion of said housing between said inlet and said change of direction,

said passage being located on a central portion of said housing between said change of direction and said outlet.

9. A device as claimed in Claim 1 wherein said passage extends downward from said inlet and said passage extends upward at said change of direction.

10. A device as claimed in Claim 2 wherein said rotor is located at said change of direction.

11. A device as claimed in Claim 4 wherein said component is located at said change of direction.

12. A device as claimed in Claim 1 wherein said rotor is centrally mounted across said passage.

13. A device as claimed in Claim 4 wherein said component is centrally mounted across said passage and said passage has a cylindrical shape.

14. A device as claimed in any one of Claims 1, 2 or 4 wherein said moisturizer is at least one spray nozzle.

15. A device as claimed in any one of Claims 1, 2 or 4 wherein said moisturizer is a plurality of spray nozzles.

16. A device as claimed in Claim 1 wherein said moisturizer is located outside of said inlet.

17. A device as claimed in Claim 1 wherein said housing has a cylindrical shape and a section of said passage between said change of direction and said outlet is formed by a cylindrical wall that is concentrically mounted within said housing.

18. A method of operating an emission control device to remove particulates from a gas, said device having an inlet and an outlet with a passage therein to receive said gas and to direct said gas to said outlet, there being a moisturizer located at or near said inlet, said device having a blower located to cause said gas to move through said device, said device having a rotor that is rotatably mounted across said passage, said passage having a change of direction and said device having a drain for moisture,

said method comprising adding moisture to said gas at said inlet, operating said blower to move said gas through said device while rotating said rotor to remove particulates and moisture from said gas, draining moisture from the device through said drain as said gas moves to said outlet.